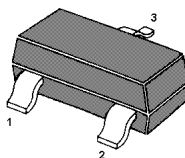
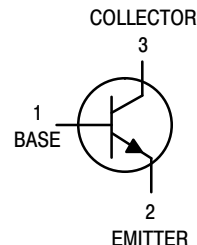


TRANSISTOR (NPN)

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR



MARKING: ZC*

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

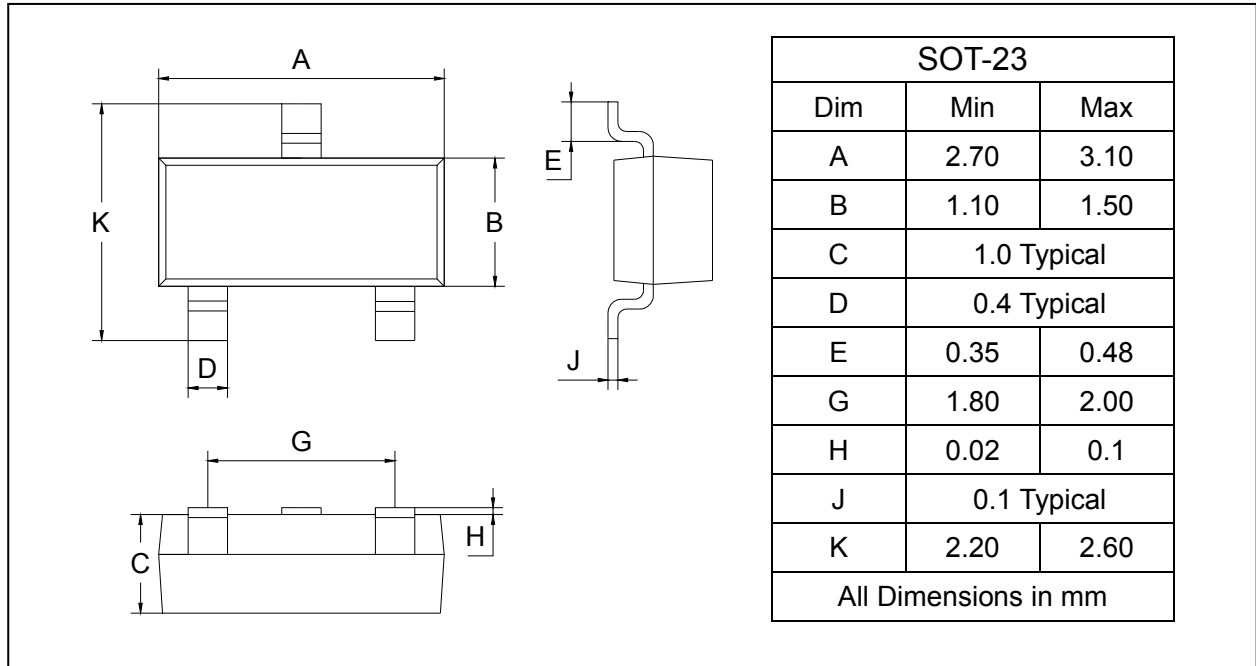
Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	200	mA
P_C	Total Device Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction to Ambient	625	$^{\circ}\text{C/W}$
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55 ~ +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

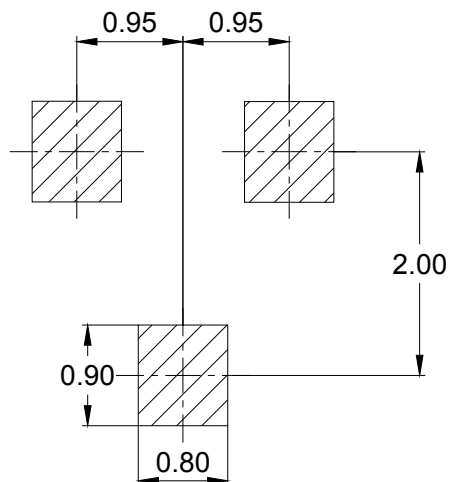
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}$, $I_E=0$	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$, $I_B=0$	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}$, $I_C=0$	6		V
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}$, $I_E=0$		0.1	μA
Collector cut-off current	I_{CEX}	$V_{CE}=30\text{V}$, $V_{BE(off)}=3\text{V}$		50	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0$		0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}$, $I_C=10\text{mA}$	100	300	
	$h_{FE(2)}$	$V_{CE}=1\text{V}$, $I_C=50\text{mA}$	60		
	$h_{FE(3)}$	$V_{CE}=1\text{V}$, $I_C=100\text{mA}$	30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50\text{mA}$, $I_B=5\text{mA}$		0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=50\text{mA}$, $I_B=5\text{mA}$		0.95	V
Transition frequency	f_T	$V_{CE}=20\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$	300		MHz
Delay Time	t_d	$V_{CC}=3\text{V}$, $V_{BE}=-0.5\text{V}$		35	nS
Rise Time	t_r	$I_C=10\text{mA}$, $I_{B1}=-I_{B2}=1.0\text{mA}$		35	nS
Storage Time	t_s	$V_{CC}=3\text{V}$, $I_C=10\text{mA}$,		200	nS
Fall Time	t_f	$I_{B1}=-I_{B2}=1\text{mA}$		50	nS

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



Unit : mm

